Cement, Concrete, and Aggregates
Table of Contents
Volume 11, 1989

Number 1, Summer

Evaluation of Test Methods for Measuring the Bond Strength of Portland Cement Based Repair Materials to Concrete—L. I. KNAB AND C. B. SPRING 3

Testing and Evaluation of a Novel Melamine-Based Superplasticizer in Concrete—S. M. LAHALIH, I. S. DAIRANIEH, M. ABSI-HALABI, AND A. M. ALI 15

Effects on Flexural Performance of Sawing Plain Concrete and of Sawing and Other Methods of Altering the Degree of Fiber Alignment in Fiber-Reinforced Concrete—C. D. JOHNSTON 23

Behavior of Cement-Reduced and "Flowing" Fresh Concretes Containing Conventional Water-Reducing and "Second Generation" High-Range Water-Reducing Admixtures—D. WHITING AND W. DZIEDZIC 30

On Testing of Very Short Concrete Specimens—H. W. CHUNG 40

Durability of Concrete under Simulated Arctic Conditions—M. MOUKWA, P.-C. AITCIN, AND M. REGOURD 45

Symposium on Concrete Problems: A 1987 Sequel

Another Look at the Portland/Chemical Admixture Incompatibility Problem—V. H. DODSON AND T. D. HAYDEN 52

Freeze-Thaw Testing of Coarse Aggregate in Concrete: Procedures Used by Michigan Department of Transportation and Other Agencies—R. H. VOGLER AND G. H. GROVE 57

Some Recent Problems with Air-Entrained Concrete—K. C. HOVER 67

Na_2SO_4 Soundness Test Evaluation—W. SHEFTICK 73

Technical Note: Effect of Curing Conditions on the Compressive Strength and Elastic Modulus of Very High-Strength Concrete—J. G. ASSELANIS, P.-C. AITCIN, AND P. I. MEHTA 80

Number 2, Winter

Basic Creep Formula for Aging Concrete: Sinh-Double Power Law—Z. P. BAZANT, J.-C. CHERN, AND Y.-G. WU 85

A Damage Model for Sulfate Attack on Cement Mortars—C. OUYANG 92

Statistical Characteristics of New Pin Penetration Test—N. J. CARINO AND R. C. TANK 100

Effect of Different Admixtures on the Strength of Sulphur Concrete—B. CZARNECKI AND J. E. GILLOTT 109

Technical Note: Drying Shrinkage of Glass Fiber Reinforced Concrete—Y. F. AL-OBAID 119

Technical Note: Observations of Healing of Cracks in High-Strength Lightweight Concrete—A. MOR, P. J. M. MONTEIRO, AND W. T. HESTER 121

Technical Note: The Morphology of Air-Entrained Voids, at Early Age—A. I. RASHED, P. J. M. MONTEIRO, R. B. WILLIAMSON, AND J. BASTACKY 126

Technical Note: Properties of Concrete at Early Ages—N. J. CARINO, H. J. M. JENNINGS, AND L. M. SNELL 129

Book Review 132

Cement, Concrete, and Aggregates
Index to Volume 11
1989

Number	Issue	Pages
1	Summer	3–80
2	Winter	81–132

A

Absi-Halabi, M.: *see* Lahalih, S. M., Dairanieh, I. S., Absi-Halabi, and Ali, A. M.

Admixtures
- Testing and Evaluation of a Novel Melamine-Based Superplasticizer in Concrete (Lahalih, Dairanieh, Absi-Halabi, and Ali), Summer, 15
- Effect of Different Admixtures on the Strength of Sulphur Concrete (Czarnecki and Gillot), Winter, 109.

Aggregate
- NA_2SO_4 Soundness Test Evaluation (Sheftick), Summer, 73.
- Drying Shrinkage of Glass Fiber Reinforced Concrete (Al-Obaid), Winter, 119.

Air content
- Behavior of Cement-Reduced and "Flowing" Fresh Concretes Containing Conventional Water-Reducing and "Second-Generation" High-Range Water-Reducing Admixtures (Whiting and Dziedzic), Summer, 30
- Some Recent Problems with Air-Entrained Concrete (Hover), Summer, 67

Air-entrained concrete: Some Recent Problems with Air-Entrained Concrete (Hover), Summer, 67

Air-entrained voids: The Morphology of Air-Entrained Voids at an Early Age (Rashed, Monteiro, Williamson, and Bastacky), Winter, 126.

Aitcin, P.-C.: *see* Asselanis, J. G., Aitcin, P.-C., and Mehta, P. K.

Aitcin, P.-C.: *see* Moukwa, M., Aitcin, P.-C., and Regourd, M.

Ali, A. M.: *see* Lahalih, S. M., Dairanieh, I. S., Absi-Halabi, and Ali, A. M.

Al-Obaid, Y. F.: Drying Shrinkage of Glass Fiber Reinforced Concrete, Winter, 119.

Asselanis, J. G., Aitcin, P.-C., and Mehta, P. K.: Effect of Curing Conditions on the Compressive Strength and Elastic Modulus of Very High-Strengh Concrete, Summer, 80

B

Bastacky, J.: *see* Rashed, A. I., Monteiro, P. J. M., Williamson, R. B., and Bastacky, J.

Bazant, Z. P., Chern, J.-C., and Wu, Y.-G.: Basic Creep Formula for Aging Concrete: Sinh-Double Power Law, Winter, 85.

Bleeding: Behavior of Cement-Reduced and "Flowing" Fresh Concretes Containing Conventional Water-Reducing and "Second-Generation" High-Range Water-Reducing Admixtures (Whiting and Dziedzic), Summer, 30

C

Carino, N. J., Jennings, H. J. M., and Snell, L. M.: Properties of Concrete at Early Ages, Winter, 129.

Carino, N. J. and Tank, R. C.: Statistical Characteristics of New Pin Penetration Test, Winter, 100.

Cement mortars: A Damage Model for Sulfate Attack of Cement Mortars (Ouyang), Winter, 92.

Chemical admixtures: Another Look at the Portland Cement/Chemical Admixture Incompatibility Problem (Dodson and Hayden), Summer, 52

Chern, J.-C.: *see* Bazant, Z. P., Chern, J.-C., and Wu, Y.-G.

Chung, H.-W.: On Testing of Very Short Concrete Specimens, Summer, 40

Coarse aggregate: Freeze-Thaw Testing of Coarse Aggregate in Concrete: Procedures Used by Michigan Department of Transportation and Other Agencies (Vogler and Grove), Summer, 57

Compressive strength: Statistical Characteristics of New Pin Penetration Test (Carino and Tank), Winter, 100

Compressive tests: On Testing of Very Short Concrete Specimens (Chung), Summer, 40

Concrete
- Basic Creep Formula for Aging Concrete: Sinh-Double Power Law (Bazant, Chern, and Wu), Winter, 85.
- Statistical Characteristics of New Pin Penetration Test (Carino and Tank), Winter, 100
- Observations of Healing of Cracks in High-Strength Lightweight Concrete (Mor, Monteiro, and Hester), Winter, 121.
- Properties of Concrete at an Early Age (Carino, Jennings, and Snell), Winter, 129.

Concrete aggregate: Freeze-Thaw Testing of Coarse Aggregate in Concrete: Procedures Used by Michigan Department of Transportation and Other Agencies (Vogler and Grove), Summer, 57

Concrete strength
- On Testing of Very Short Concrete Specimens (Chung), Summer, 40.
- Effect of Different Admixtures on the Strength of Sulphur Concrete (Czarnecki and Gillot), Winter, 109.

Cracking: Observations of Healing of Cracks in High-Strength Lightweight Concrete (Mor, Monteiro, and Hester), Winter, 121.

Creep: Basic Creep Formula for Aging Concrete: Sinh-Double Power Law (Bazant, Chern, and Wu), Winter, 85

Curing: Effect of Curing Conditions on the Compressive Strength and Elastic Modulus of Very High-Strength Concrete (Asselanis, Aitcin, and Mehta), Summer, 80

Cyclic loading: Observations of Healing of Cracks in High-Strength Lightweight Concrete (Mor, Monteiro, and Hester), Winter, 121.

Czarnecki, B. and Gillott, J. E.: Effect of Different Admixtures on the Strength of Sulphur Concrete, Winter, 109.

D

Dairanieh, I. S.: *see* Lahalih, S. M., Dairanieh, I. S., Absi-Halabi, M., and Ali, A. M.

Dodson, V. H. and Hayden, T. D.: Another Look at the Portland Cement/Chemical Admixture Incompatibility Problem, Summer, 52

Drill core analysis: On Testing of Very Short Concrete Specimens (Chung), Summer, 40

Durability
- Durability of Concrete under Simulated Arctic Conditions (Moukwa, Aitcin, and Regourd), Summer, 45
- NA2SO4 Soundness Test Evaluation (Sheftick), Summer, 73

Dziedzic, W.: *see* Whiting, D. and Dziedzic, W.

E

Early age concrete: Properties of Concrete at an Early Age (Carino, Jennings, and Snell), Winter, 129.

Elastic modulus: Effect of Curing Conditions on the Compressive Strength and Elastic Modulus of Very High-Strength Concrete (Asselanis, Aitcin, and Mehta), Summer, 80

Entrained air: Some Recent Problems with Air-Entrained Concrete (Hover), Summer, 67

F

False set: Another Look at the Portland Cement/Chemical Admixture Incompatibility Problem (Dodson and Hayden), Summer, 52

Freeze-thaw testing: Freeze-Thaw Testing of Coarse Aggregate in Concrete: Procedures Used by Michigan Department of Transportation and Other Agencies (Vogler and Grove), Summer, 57

G

Gel space ratio: A Damage Model for Sulfate Attack of Cement Mortars (Ouyang), Winter, 92.
Gillott, J. E.: *see* Czarnecki, B. and Gillott, J. E.
Glass fiber: Drying Shrinkage of Glass Fiber Reinforced Concrete (Al-Obaid), Winter, 119.
Grove, G. H.: *see* Vogler, R. H. and Grove, G. H.

H–J

Hayden, T. D.: *see* Dodson, V. H. and Hayden, T. D.
Hester, W. T.: *see* Mor, A., Monteiro, P. J. M., and Hester, W. T.
High-Range Water Reducer: Behavior of Cement-Reduced and "Flowing" Fresh Concretes Containing Conventional Water-Reducing "Second-Generation" High-Range Water-Reducing Admixtures (Whiting and Dziedzic), Summer, 30
High-strength concrete: Effect of Curing Conditions on the Compressive Strength and Elastic Modulus of Very High-Strength Concrete (Asselanis, Aitcin, and Mehta), Summer, 80
Hover, K. C.: Some Recent Problems with Air-Entrained Concrete, Summer, 67
Jennings, J. M.: *see* Carino, N. J., Jennings, H. J. M., and Snell, L. M.
Johnston, C. D.: Effects on Flexural Performance of Sawing Plain Concrete and of Sawing and Other Methods of Altering the Degree of Fiber Alignment in Fiber-Reinforced Concrete, Summer, 23

K

Knab, L. I. and Spring, C. B.: Evaluation of Test Methods for Measuring the Bond Strength of Portland Cement Based Repair Materials to Concrete, Summer, 3

L

Lahalih, S. M., Dairanieh, I. S., Absi-Halabi, M., and Ali, A. M.: Testing and Evaluation of a Novel Melamine-Based Superplasticizer in Concrete, Summer, 15

M

Mehta, P. K.: *see* Asselanis, J. G., Aitcin, P.-C., and Mehta, P. K.
Microstructure
Durability of Concrete under Simulated Arctic Conditions (Moukwa, Aitcin, and Regourd), Summer, 45.
The Morphology of Air-Entrained Voids at an Early Age (Rashed, Monteiro, Williamson, and Bastacky), Winter, 126.
Properties of Concrete at an Early Age (Carino, Jennings, and Snell), Winter, 129.
Monteiro, P. J. M.: *see* Mor, A., Monteiro, P. J. M., and Hester, W. T.
Monteiro, P. J. M.: *see* Rashed, A. I., Monteiro, P. J. M., Williamson, R. B., and Bastacky, J.
Mor, A., Monteiro, P. J. M., and Hester, W. T.: Observations of Healing of Cracks in High-Strength Lightweight Concrete, Winter, 121.
Moukwa, M., Aitcin, P.-C., and Regourd, M.: Durability of Concrete under Simulated Arctic Conditions, Summer, 45

N–O

Ouyang, C.: A Damage Model for Sulfate Attack of Cement Mortars, Winter, 92.
Overlaying: Evaluation of Test Methods for Measuring the Bond Strength of Portland Cement Based Repair Materials to Concrete (Knab and Spring), Summer, 3

P–Q

Patching: Evaluation of Test Methods for Measuring the Bond Strength of Portland Cement Based Repair Materials to Concrete (Knab and Spring), Summer, 3
Penetration test: Statistical Characteristics of New Pin Penetration Test (Carino and Tank), Winter, 100
Portland cement
Another Look at the Portland Cement/Chemical Admixture Incompatibility Problem (Dodson and Hayden), Summer, 52
Evaluation of Test Methods for Measuring the Bond Strength of Portland Cement Based Repair Materials to Concrete (Knab and Spring), Summer, 3

R

Rashed, A. I., Monteiro, P. J. M., Williamson, R. B., and Bastacky, J.: The Morphology of Air-Entrained Voids at an Early Age, Winter, 126.
Regourd, M.: *see* Moukwa, M., Aitcin, P.-C., and Regourd, M.

S

Scanning electron microscope: The Morphology of Air-Entrained Voids at an Early Age (Rashed, Monteiro, Williamson, and Bastacky), Winter, 126.
Seawater: Durability of Concrete under Simulated Arctic Conditions (Moukwa, Aitcin, and Regourd), Summer, 45
Sheftick, W.: Na_2SO_4 Soundness Test Evaluation, Summer, 73
Shrinkage: Drying Shrinkage of Glass Fiber Reinforced Concrete (Al-Obaid), Winter, 119.
Snell, L. M.: *see* Carino, N. J., Jennings, H. J. M., and Snell, L. M.
Soundness: NA_2SO_4 Soundness Test Evaluation (Sheftick), Summer, 73
Spring, C. B.: *see* Knab, L. I. and Spring, C. B.
Sulfate attack: A Damage Model for Sulfate Attack of Cement Mortars (Ouyang), Winter, 92.
Sulfonated resins: Testing and Evaluation of a Novel Melamine-Based Superplasticizer in Concrete (Lahalih, Dairanieh, Absi-Halabi, and Ali), Summer, 15
Sulphur: Effect of Different Admixtures on the Strength of Sulphur Concrete (Czarnecki and Gillot), Winter, 109.
Superplasticizers: Testing and Evaluation of a Novel Melamine-Based Superplasticizer in Concrete (Lahalih, Dairanieh, Absi-Halabi, and Ali), Summer, 15

T

Tank, R. C.: *see* Carino, N. J. and Tank, R. C.

U–V

Viscoelasticity: Basic Creep Formula for Aging Concrete: Sinh-Double Power Law (Bazant, Chern, and Wu), Winter, 85
Vogler, R. H. and Grove, G. H.: Freeze-Thaw Testing of Coarse Aggregate in Concrete: Procedures Used by Michigan Department of Transportation and Other Agencies, Summer, 57

W–Z

Whiting, D. and Dziedzic, W.: Behavior of Cement-Reduced and "Flowing" Fresh Concretes Containing Conventional Water-Reducing and "Second-Generation" High-Range Water-Reducing Admixtures, Summer, 30
Williamson, R. B.: *see* Rashed, A. I., Monteiro, P. J. M., Williamson, R. B., and Bastacky, J.
Wu, Y.-G.: *see* Bazant, Z. P., Chern, J.-C., and Wu, Y.-G.